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dentibus. Locus natalis ex *Russia*, vel ad *Wolgam* certe flumen, ad cujus litora longo itinere plantas inquisivit.

Ex calyce & flore *Jaceæ* genus est *Vaillantio*, mihi Cyani, Cl. *Linnaeo* *Centaureæ*; quo tamen nomine nimis multas plantas comprehendit vir egregius, quam ut commoda nomina imponere liceat.

XVI. *A Letter from the Reverend Mr. Roger Pickering, V.D.M. to C. Mortimer, M.D. Secr. R. S. concerning the Propagation and Culture of Mushrooms.*

Deptford, April 19. 1744.

Dear Sir,

Read April 6. 1744. **T**HE late Rains having thrown up upon my Mushroom Beds a great Quantity of those Plants, I take the Opportunity to send some additional Observations to those printed in these *Transactions*, N^o 471. p. 593.

After having repeated the Experiments, then made, upon Plants and Seeds of this Year, I find no Reason to alter any thing there mentioned, either as to the *Lamelle* or Chives on the concave Side of the *Umbella*, being the *Siliquæ* or Seed-vessels; or the Seeds falling from thence to a Lodgement wisely prepared for it on the middle of the *Caulis*, and from thence easily sliding to the Earth contiguous to the Mother-Plant; or as to its Propagation by fibrous Runners, or *Stolones*, like Potatoes; all which, I am persuaded, these

these following new Observations sufficiently confirm.

1. Upon Examination of several *Lamellæ*, I not only distinctly observed Seeds, of Size and Colour proportionable to the Maturity of the Plant, lodged therein, but also a filiquaceous Aperture, with a Row of Seeds ready to fall through it; which is a very evident Proof, that each distinct Chive is a *Siliqua* or Seed-vessel.

2. Upon Observation of the Filament situated on the middle of the *Caulis*, upon which, as I before observed, I at first discovered the Seed, I found both its Contexture and Situation evidently demonstrating the End for which the wise Creator placed it there; *viz.* to intercept the Seeds in their Fall to the Ground; whereby the Power which the Wind would otherwise have upon such minute Bodies is lessened, and the Seed, with little or no Dissipation, securely directed near the Stem of its Mother-Plant. For this Filament is indented and pappous, to catch and lodge the Seed as it falls from the *Siliqua*; and is, at first, rigid, and standing horizontal to the *Umbella* or Head, and at right Angles with the *Caulis*; whereby few or no Seeds can fall without being intercepted: But, as the Plant comes nearer to its Decay, this Filament relents, falls down close to the Sides of the *Caulis*; and its several Indentures then making parallel Lines with the Fibres of the Stalk, the Seeds are, through them, conveyed, as through little Ducts or Channells, to the Ground.

'Tis further to be observed, that this Filament is not of so succulent a Contexture as the *Siliqua* or Seed-vessel; so that the Seeds, which would other-

wife rot in the *Siliqua*, are here retained in full Health, till the Period of their falling to the Ground. I have now by me the Filament of a Plant, laid by for Observation ever since *October* the 28th last past, which is near half a Year ago; from which, two Days ago, I took Seeds fair and perfect.

3. Upon Examination of the *Caulis* in several Sections, I find the Mushroom a Plant more perfect than has been thought. It has a perfect *Radix*; a *Caulis* consisting of Fibres, the Interstices of which are filled up by a parenchymous Substance, leading from the *Radix* to the *Umbella* or Head: It has, as has been observed, its *Semen* and *Siliquæ*, and more regular Periods of Vegetation than is supposed. The common Opinion of a Mushroom's springing up in a Night, and perishing in a Day, has no Foundation in Fact. I have now by me some in all States of Maturity; some of which, to my Knowledge, are near a Fortnight old, and yet but just arrived to a Fitness for the Table.

4. Upon Examination of several Mushrooms, exposed to the open Air, but kept from the Injuries of the Sun and Rain, I find no *Animalcula* bred therein, nor, as yet, a Tendency to Putrefaction; though they have been exposed thus for a Week. On the other hand, upon examining a Mushroom, very far from being full-grown, putrefy'd by the Rain, and Moisture of the Dung in the Bed, I found *Animalcula*, discoverable only by the third Magnifier, floating in the Liquor, squeezed out from it: From which I think it evident, that the dangerous Consequences which History has informed us to have attended the Eating of Mushrooms, have not arose from

from any poisonous Quality essential to them, but from the accidental *Ova* or *Animalcula*, which the Richness of their Nutriment has allured to them, and which their Contiguity to the Ground, and the Places they are produced in, render them obnoxious to. These *Animalcula* I have lately had an accurate View of; but as they demand a fuller Account, than this Paper, already too long, will permit, I shall reserve the Observations upon them for another Opportunity of being honoured with the Attention of the Society.

However, it may not be amiss to subjoin a short Account of the Culture in the Kitchen-garden of a Plant which contributes so much to the Delicacy of polite Tables, which may be depended upon, from personal Trial and Success; as those few Writers upon the Subject, not being acquainted with the true Mushrooms, are not intirely to be depended upon.

In the Melonry, or Place allotted in the Garden for Hot-beds, the Mushrooms must be thus ordered: Having marked out a Portion of Ground one Yard and a half broad, and of any Length, as the Ground will permit; fasten two Sticks at each End of the diametrical Distance already marked out, which shall, by inclining to each other on the Top, form an *Isosceles* Triangle. To the Breadth and Height of these Sticks must the Bed be made, of old, rich, dry Dung, closely trod together: Neither new nor moist Dung is proper; for the Mushroom being naturally of a succulent and spongy Contexture, too much Heat, and too much Moisture, must necessarily injure it.

Having raised your Bed to the Height and Breadth proposed, cover it with fine screen'd Mould, to the Thickness of three Inches, into which, at proper Distances, put either that white fibrous Substance, which may be collected from the Place where Mushrooms have formerly grown; or else water it with Water in which the Chives and Parings of Mushrooms have been steeped; or you may put in the Chives in gross. If you take the first Step, the Mushroom is propagated by Transplantation; that white fibrous Substance, already mentioned, being no other than the *Stolones* of old Mushrooms, from which others are propagated, like Potatoes: If you take the second, that is, by Watering; the Seeds lodged in the Parings being, by the Water, separated from the *Siliqua*, and with it poured upon the Mould, are that which gives Fertility to the Beds thus managed. If you put the Chives in gross into the Mould, it is no more than sowing the Seed in the Pods, as in other Plants it is sometimes necessary to do. Over the Bed, thus prepared, must constantly be kept a Covering of long new Litter, to the Thickness of one Foot, to preserve the Plant from the Frost, the Sun, and the Wind. During the Middle of Summer, and the Extremity of Winter, it is best to make these Beds under Shelter; but at other times they are best exposed, the warm Rains not a little contributing to their Fertility; which, by the sloping Fashion of the Beds, are suffered to moisten them no more than necessary.

I shall only add, that when I speak of the Mushrooms, as I have all along done, I mean the *Fungus*

*gus * porofus, craffus, magnus*, called, by way of Eminence, in *England*, the *Mushroom*; and shall conclude myself,

S I R,

Your most assured

Friend and Servant,

R. Pickering.

* Mr. *Watson*, a very skilful and ingenious Botanist, was so kind as to remark, that the *Mushroom* here meant, is the *Fungus campestris albus superne, inferne rubens*. J. B. See *Raii Synopf. Stirp. Brit. Edit. secunda*, p. 11.